# A Comparison of Diagnostic Interviews for Children

A Senior Honors Thesis

Presented in Partial Fulfillment of the Requirements for Graduation with Research Distinction in Psychology in the Undergraduate Colleges of The Ohio State University

By

Sara Rathman Fuller

The Ohio State University

May, 2008

Project Advisor: Dr. Mary Fristad, Department of Psychology

Abstract

Several diagnostic interviews have been developed for use with children. However, there is little empirical evidence to support the effectiveness of these interviews (Mash & Hunsley, 2005). Two interviews, the Schedule for Affective Disorders and Schizophrenia for School Aged Children (K-SADS) (Puig-Antich & Chambers, 1978), and the Children's Interview for Psychiatric Syndromes/Parent-Children's Interview for Psychiatric Syndromes (ChIPS/P-ChIPS) (Weller, Weller, Rooney, & Fristad, 1999a & 1999b), were compared to examine the efficacy of different diagnostic interviews used with children. Each interview was administered to 25 parent-child informant pairs from the Longitudinal Assessment of Manic Symptoms (LAMS) study at The Ohio State University. Children were split into two groups, 7-10 years and 11-14 years, and diagnoses from each interview and a clinician report were compared for the older and younger groups. Findings showed no age effect for agreement between each interview and clinician report. However, the older group showed higher agreement between ChIPS summary and K-SADS diagnoses than the younger group. Finally, child K-SADS interviews alone reported too few diagnoses to compare with the ChIPS, which may suggest the superiority of the ChIPS at eliciting responses from children.

# A Comparison of Diagnostic Interviews for Children

Several interviews have been developed to ascertain clinical diagnoses in children and adolescents. These interviews come in various forms, all of which can be useful in different settings and with different populations. However, although several interviews for children are currently in use, little attention has been paid to the developmental differences that affect assessment ability in children and adolescents (Achenbach, 2005). In fact, many interviews that currently set the standard for the assessment of disorders in children have not been sufficiently researched or empirically supported (Mash & Hunsley, 2005). Thus, current child diagnostic interviews lack proper standardization and may be ineffective (Achenbach, 2005).

Furthermore, results of diagnostic interviews regarding children are often based almost entirely on the responses from a parent informant. According to meta-analyses, there is little correlation between parent informant responses and child informant responses (Achenbach, McConaughy, & Howell, 1987). However, the child clinical interview can provide some valuable information to supplement the parents' report of symptoms. For example, observing the child during an interview, including their "activity level, attention span, impulsivity, distractibility, reactions to frustration and praise, responsiveness to limit setting, communicative competence, nervous mannerisms, range of emotional expression, and logic of thought processes", allows the interviewer to experience the child's potentially symptomatic behavior first-hand (Hughes & Baker, 1990 as cited in McConaughy, 2000). Further, a child interview can help reveal the child's perception of their experiences, which is perhaps more important than the experiences themselves (McConaughy, 2000). Therefore, the current child portions of clinical interviews are useful but should not be considered more than "one

piece of a puzzle that is ready to be assembled after all other data are gathered" (Kestenbaum, 2006).

Diagnostic interviews for children and adolescents vary in length and structure, and two types of interview are of interest to this study. The first, structured interviews, were developed to impose reliability and validity on the clinical interview. They include questions to be read verbatim and in the order directed by the test administration manual. Most require "yes" or "no" responses, and the interview provides little room for clinical judgment. Thus, the administration of a structured interview is not necessarily limited to those with extensive clinical training (Edelbrock & Costello, 1984). However, structured interviews are generally not effective at gathering a broad scope of information, such as a person's wide range of feelings, personality traits, and coping strategies, which can affect the perception of events, behavior, and symptoms. To incorporate general personality characteristics and circumstances, the first semi-structured interviews were developed (Kestenbaum, 2006).

In contrast, semi-structured interviews offer the interviewer a set of suggested questions without imposing a particular order. These questions are worded at the discretion of the interviewer and are open-ended; the interviewer has some freedom to interpret informant responses. Semi-structured interviews are currently considered the most appropriate diagnostic interviews for use with children because they allow interviewers to use a questioning strategy that is flexible, and therefore sensitive, to each child's language abilities and developmental level (McConaughy, 2000). However, since the use of clinical judgment is necessary, only experienced clinicians or professionals who have received extensive training may administer most semi-structured interviews (Edelbrock & Costello, 1984).

Specifically, two interviews were compared in this study: the *Schedule for Affective Disorders and Schizophrenia for School Aged Children* (K-SADS; Puig-Antich & Chambers, 1978), a semi-structured interview, and the *Children's Interview for Psychiatric Syndromes/Parent-Children's Interview for Psychiatric Syndromes* (ChIPS/P-ChIPS), a highly structured interview (Weller, Weller, Rooney, & Fristad, 1999a & 1999b). The K-SADS is currently viewed as the standard for research regarding bipolar youth (Nottelmann et al., 2001). The ChIPS has not yet been used extensively in research but was developed specifically for use with children six years and older (Weller et al. 1999a & 1999b).

*Schedule for Affective Disorders and Schizophrenia for School Aged Children: Present and Lifetime Version Plus (K-SADS-PL-W)*

The K-SADS was developed from an adult measure, the Schedule for Affective Disorders and Schizophrenia (SADS; Endicott & Spitzer, 1978) and is widely used to assess childhood mood disorders. It has been updated several times to remain consistent with the *Diagnostic and Statistical Manual of Mental Disorders* (DSM; American Psychiatric Association) revisions. The K-SADS Present Episode Version (K-SADS-P; Chambers et al., 1985) is the basis for versions of the K-SADS that are widely used in research. The K-SADS-P consists of four sections: affective, anxiety, conduct, and psychosis. It has demonstrated moderate test-retest reliability (0.54-0.63) for depression and conduct disorder, high reliability for "nonmajor" depressive disorders, and poor reliability for anxiety disorders (Chambers et al., 1985).

Three versions of the K-SADS are currently used in research. The first, the K-SADS "present and lifetime" version (K-SADS-PL; Kaufman et al., 1997) was developed to assess a child's current and lifetime diagnoses. The K-SADS-PL includes a wider range of Axis I disorders than the original K-SADS. The interview also offers six

supplements that can be used if cardinal symptoms are endorsed in the screening portion of the K-SADS-PL. Impairment ratings are included for each disorder, and a section for rating global impairment can be found at the end of the interview (Ambrosini, 2000). According to Kaufman et al. (1997), the K-SADS-PL takes about 75 minutes per informant to administer to a psychiatric outpatient population. It has demonstrated criterion validity with several measures, including the Child Behavior Checklist. Test-retest reliability for the K-SADS-PL has been high (0.77-1.00) for depressive disorders, bipolar disorder, oppositional defiant disorder, anxiety disorders, and conduct disorder and moderate (0.63-0.67) for ADHD and posttraumatic stress disorder. Ambrosini (2000) also checked test-retest reliability and found it to be generally high, ranging from 1.00 for major depressive disorder to 0.55 for ADHD.

Another version is the Washington University in St. Louis K-SADS (WASH-U-KSADS; Geller, Williams, Zimmerman, & Frazier, 1996). This version of the K-SADS was created for research with childhood-onset bipolar disorder. It was created based on the K-SADS-Present Episode Version-1986 (K-SADS-1986; Puig-Antich & Ryan, 1986), an update to the K-SADS-P. In addition to the base interview, the WASH-U-KSADS includes a detailed mood disorder section to assess mania, rapid cycling, and comorbid conditions. Psychometric studies determined that internal consistency and interrater reliability were both high for the new mania rating scale (Axelson et al., 2003).

Finally, the K-SADS Present and Lifetime Version Plus was developed (K-SADS-PL-W; Lingler, Bedoya, & Findling, 2007). This version combines the K-SADS-PL with the mood disorder items from the WASH-U-KSADS and has been updated to be consistent with the DSM ($4^{th}$ ed., text revision) (DSM-IV-TR; American Psychiatric Association, 2000). It also includes a supplement for pervasive developmental

disorders. No psychometric properties for the K-SADS-PL-W have been reported in the literature.

*Children's Interview for Psychiatric Syndromes (ChIPS)*

The ChIPS (Weller et al., 1999a) was created to address the major problems associated with current diagnostic interviews, including "excessive length" and "the use of age-inappropriate language" (Teare, Fristad, Weller, Weller, & Salmon, 1998a). The interview includes age-appropriate vocabulary and short, simple sentence structure (Teare et al., 1998a). Questions are also relatively short, since children are better able to understand shorter sentences (Harris & Liebert, 1987). It is relatively brief in length, averaging 49 minutes for inpatients, 30 minutes for outpatients, and 21 minutes for a community-based sample (Weller, Weller, Fristad, & Rooney, 2000).

Further, the ChIPS provides specific alternative phrases that the interviewer can use if the child being assessed is not familiar with the vocabulary of a question (Weller et al., 2000). For example, one questions asks, "Do you feel more cranky [crabby, grumpy, snappy] than usual?" (Weller et. al., 1999a). The interviewer has the option to use any of the words in brackets if the child appears confused by the language in the question, in this case, "cranky". The use of alternative vocabulary was another step intended to increase child comprehension and cooperation during the interview (Weller et al., 2000).

The interview begins with the most common psychiatric syndromes (i.e., ADHD) and ends with the least common (i.e., schizophrenia). Interview questions are asked using a branching format that first considers cardinal symptoms, or those that must be present to diagnose the disorder. If the child endorses these symptoms, the interviewer must continue through the more disorder-specific questions to determine whether the child meets full criteria, duration, and impairment for diagnosis of the

disorder. However, if the informant answers no to the questions regarding cardinal symptoms, the interviewer has the option to move on to the next disorder. This allows the interviewer to assess the child relatively efficiently so the child's attention can be maintained as much as possible throughout the interview (Teare et al., 1998a; Weller et. al., 2000). Diagnostic criteria for the ChIPS/P-ChIPS were first derived from criteria found in the DSM (3rd ed.) (DSM-III; American Psychiatric Association 1980) and have since been updated to correspond with the criteria in the DSM (4th ed.) (DSM-IV; American Psychiatric Association, 1994; Weller, et al. 2000).

Psychometric studies of the ChIPS/P-ChIPS have found that the interview is both reliable and valid for assigning psychiatric diagnoses to children and adolescents. The original ChIPS, which contained diagnostic criteria consistent with the DSM-III, was compared to the Diagnostic Interview for Children and Adolescents (DICA; Herjanic, Herjanic, Brown, & Wheatt et al., 1975), a widely-used interview structured similarly to the ChIPS (Teare et al., 1998a). Compared with the DICA, the ChIPS demonstrated superior sensitivity (0.80 vs. 0.61) but slightly lower specificity (0.78 vs. 0.87) in an inpatient sample of 42 children. Overall, the ChIPS showed high levels of agreement with an established, reliable assessment (Teare et al. 1998a).

The ChIPS was then revised for the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., revised) (DSM-III-R; American Psychiatric Association, 1987) and was compared to the revised Diagnostic Interview for Children and Adolescents (DICA-R-C; Welner, Reich, Herjanic, Jung, & Amado, 1987). A parent version, the Children's Interview for Psychiatric Syndromes- Parent Version (P-ChIPS; Weller et al., 1999b), was also added. In a sample of 71 inpatient and outpatient children, ChIPS sensitivity was moderate (0.48 on average), and specificity was high (0.86). ChIPS demonstrated higher agreement with clinician diagnosis than the DICA-R-C, and showed significant

overall agreement with the DICA-R-C. Administration time of the ChIPS was also about 23 minutes shorter than the DICA-R-C for both inpatients and outpatients (Teare, Fristad, Weller, Weller, & Salmon, 1998b). The DSM-III-R P-ChIPS has shown moderate agreement with the DSM-III-R ChIPS as well as the clinician diagnoses in a clinical setting. In a sample of 36 child-parent pairs, P-ChIPS sensitivity was 0.87, and specificity was 0.76 (Fristad, Teare, Weller, Weller, & Salmon, 1998).

Finally, the ChIPS and P-ChIPS were updated according to the DSM-IV. In a sample of 47 psychiatric inpatients aged 6 to 17, agreement between DSM-IV ChIPS and DICA-R-C was similar to previous findings, as was agreement between the DSM-IV ChIPS and discharge diagnoses of the sample. Sensitivity was 0.70, and specificity was 0.84 when compared with clinician diagnoses. Further, concordance between ChIPS and clinician report was 86% in the 6-12 age group, and in the 13-17 age group, concordance was 83%. The absence of an age effect indicates the possible benefit of using the ChIPS with populations of younger children (Fristad, Cummins, et al., 1998). The DSM-IV ChIPS has also been tested in a nonclinical sample of 40 children ages 6-18. Results suggest that ChIPS diagnoses accurately reflect the diagnoses expected in a nonclinical sample, as 17.5% of the sample endorsed at least one disorder (Fristad, Glickman, et al., 1998).

Thus, the ChIPS/P-ChIPS psychometric studies have demonstrated its effectiveness at assigning diagnoses in clinical populations (Fristad, Cummins et al., 1998). These studies have also confirmed the ability of the ChIPS to screen out children who do not have diagnoses (Fristad, Glickman et al., 1998). Additionally, the ChIPS has thus far demonstrated its value as a diagnostic tool for a wide range of children due to its simplicity and brevity (Fristad, Cummins et al. 1998). According to Weller et al. (2000), the ChIPS and P-ChIPS may be more sensitive than other

interviews at eliciting diagnoses from children (0.66 vs. 0.41, respectively). Further, the ChIPS and P-ChIPS have about the same accuracy as other interviews regarding specificity (0.83 vs. 0.79, respectively). The ChIPS also has a negative predictive value of 0.96, indicating the proportion of true (i.e., clinician diagnoses) negatives to ChIPS negatives is fairly high. This means that non-endorsed disorders on the ChIPS are not actually present 96% of the time, reinforcing the efficacy of the ChIPS as a screening tool. However, the ChIPS has not been tested by researchers other than its authors or with ethnic minority samples (Weller et al., 2000).

*Comparison of Interviews*

It is important to consider how interview design may affect a child's report of symptoms. The K-SADS is a flexible interview and allows the interviewer to re-word questions if a child is unable to understand when asked the first time. There is also more room for clinical judgment, which allows professionals to probe the child further should they suspect a child may be hesitant to respond or withholding crucial information. Clinical judgment can also help the interviewer interpret a child's response if they suspect the child does not have enough insight to answer a question accurately. For example, a young boy reports that he wets the bed. However, he may be too embarrassed or unable to accurately report how often he wets the bed, so the interviewer is left to decide whether his bedwetting is deviant according to age-group norms or typical for his age (McConaughy 2000).

However, the K-SADS can be quite time-consuming, taking approximately 180 minutes to administer to both parent and child (Ambrosini, 2000). Although the interviewer may provide breaks to the child throughout the interview, it can still be a grueling process, especially for children who exhibit inattention or other behavior issues. Further, many children are unaccustomed to lengthy interactions with adults

and speaking about their feelings for the purpose of providing clinically pertinent information. This unfamiliarity may increase the time it takes the child to consider how to respond to questions and also evoke anxiety, which may lead the child to respond untruthfully to questions for fear they will "get in trouble" for responding a certain way (McConaughy 2000).

In contrast, the ChIPS/P-ChIPS is less flexible than the K-SADS and asks more direct questions which have been shown to elicit less information than open-ended questions. However, direct questions are thought to be more effective at providing specific details such as severity, duration, and context of symptoms, which can help the interviewer determine the presence or absence of diagnoses more accurately than with open-ended questions (Cox, Hopkinson, & Rutter, 1981). Further, direct questions are typically thought to induce anxiety because they may seem threatening or accusatory to children (Bierman, 1983, as cited in McConaughy, 2000). However, psychometric studies have shown high child cooperation during the ChIPS/P-ChIPS because of the characteristics meant to assist children's ability to understand question content (Weller, et al. 2000). These include bracketed alternative phrases in some questions and simple, concise wording throughout the interview. Further, the branching format of the ChIPS/P-ChIPS allows the interviewer to skip whole portions of the interview, which shortens administration time if the informant does not endorse certain groups of symptoms. It also allows interviewers to move through the interview quickly, an average of 36 minutes per informant (Rooney, Fristad, Weller, & Weller, 1999), which is especially beneficial when considering attention span of a clinical population, or of children in general.

*Purpose of This Study*

I compared results obtained from the ChIPS/P-ChIPS to those from the K-SADS in two groups of youth: ages 7-10 and ages 11-14. Five sources of diagnostic data were used for comparisons: clinician report; ChIPS summary; K-SADS diagnoses; ChIPS diagnoses; and child K-SADS diagnoses. The clinician report includes those diagnoses assigned by a licensed clinician who has considered the parent and child reports from both the K-SADS and ChIPS/P-ChIPS, family history information, and the interviewers' observations of parent and child behavior. The ChIPS summary is the final report of ChIPS/P-ChIPS diagnoses based on both the parent and child interviews, combining the diagnoses derived from the ChIPS with those from the P-ChIPS. In contrast, the K-SADS diagnoses is the final report of K-SADS diagnoses after all symptoms have been considered but is not necessarily the sum of the parent and child diagnoses. That is, if one informant reports diagnosis but the other does not, the interviewer can choose whether to assign that diagnosis based on their clinical judgment and overall understanding of the child's situation. Finally, the ChIPS diagnoses and child K-SADS diagnoses are the diagnoses obtained from the ChIPS and the child portion of the K-SADS.

Specifically, I made the following comparisons with each age group:

- ChIPS/P-ChIPS Summary vs. Clinician Report
- K-SADS Summary vs. Clinician Report
- ChIPS/P-ChIPS Summary vs. K-SADS Summary
- ChIPS Diagnoses vs. Child Portion of K-SADS Diagnoses

As stated earlier, the child interview is only a small part of the assessment process. Currently, the parent interview is considered more useful than the child interview for accurately reporting symptoms. However, based on the specific

development of the ChIPS for children as young as age six and the absence of an age effect between child and adolescent groups in prior research, I hypothesized the ChIPS would elicit more accurate responses than the K-SADS in both age groups. I also expected that older children will be able to report more accurately than younger children on the K-SADS because the vocabulary and complexity of sentence structure should matter less for those with more developed language skills, although I expected that even the 11-14 age group would also struggle with reporting on the K-SADS interview. Further, because the parent interview is such an integral part of the K-SADS, I anticipated K-SADS diagnoses would be based mainly on the parent report, especially for the younger group.

*Hypotheses*

1. Age groups will not differ in agreement between the ChIPS summary and clinician report.
2. Age groups will not differ in agreement between the K-SADS and clinician report.
3. Agreement between the ChIPS summary and the K-SADS will be high in both groups but better in the 11-14 age group.
4. Agreement between ChIPS diagnoses and child K-SADS diagnoses will be low to moderate for both groups but higher in the older group.

## Method

*Participants*

Participants were recruited as part of the Comparison of Diagnostic Interviews for Children Accessing Outpatient Mental Health Services (CDIC), a current dissertation project comparing two diagnostic interviews: the Schedule for Affective Disorders and Schizophrenia for School Aged Children (K-SADS) and the Children's Interview for

Psychiatric Syndromes (ChIPS/P-ChIPS). CDIC participants were recruited from various outpatient mental health clinics in the Columbus area as part of the Longitudinal Assessment of Manic Symptoms (LAMS), an ongoing study of children and adolescents considered at-risk for developing bipolar disorder during an initial screening (RO1MH073801-02, PI: Fristad, M. A., Co-I: Arnold, L. E.). LAMS participants attend an initial baseline assessment and return for follow-up assessment every six months. CDIC participants were recruited during their 12- or 24-month LAMS follow-up assessment during which they receive the full version of the K-SADS-PL-W.

The CDIC sample size will be 50 parent-child pairs (50 children/adolescents age 7-14 and 50 parent informants), drawn from the LAMS sample, which currently has 168 participants. This study had a final sample size of 25 parent-child pairs from the CDIC sample. LAMS participants are recruited from outpatient mental health clinics in the greater Columbus area and screened for eligibility. During the screening process, parent informants complete the Short Form of the General Behavior Inventory (P-GBI-SF10; Youngstrom et al., 2005) about their child/adolescent to identify youth with elevated symptoms of mania. About 15-20% of the LAMS sample is considered a comparison group, recruited from the same population, and includes children who do not experience elevated symptoms of mania. This study includes participants from both the comparison group and the positively screened group to remain consistent with LAMS and CDIC and to obtain the most representative sample of LAMS participants.

Children who participate in LAMS are not required to have a DSM-IV diagnosis, but most do. Diagnoses in the LAMS study include mood disorders, anxiety disorders, schizophrenia and other psychotic disorders, posttraumatic stress disorder, adjustment disorders, attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder, conduct disorder, eating disorders, and elimination disorders. If a child receives the

diagnosis of autism or intellectual disability (defined by an IQ <70 and impairment in adaptive functioning) during their LAMS baseline assessment, the child is exited from the study at that point and does not return for follow-up interviews. Thus, no child in the CDIC sample has been diagnosed with either of these disorders.

*Measures*

Instruments used in this study are the *K-SADS Present and Lifetime Version Plus* (K-SADS-PL-W; Lingler et al., 2007, January) and *the Children's Interview for Psychiatric Syndromes* (ChIPS/P-ChIPS; Weller et al., 1999a; 1999b).

This version of the K-SADS-PL-W was created specifically for LAMS. It includes additional screening items and a supplement for pervasive developmental disorders. These do not appear in any earlier edition of the K-SADS, and there are no psychometric data to report on the items or the supplement. Several items were also cut from the original K-SADS-PL-W. Any outdated items, such as items to assess criteria from the DSM-III not retained in the DSM-IV, were removed. Some items regarding associated features of depression and mania were also removed a short time after the start of LAMS to shorten the K-SADS to a more palatable length for participating families. Altogether, the K-SADS used in LAMS and CDIC tests for 42 DSM-IV Axis I disorders.

The ChIPS is a highly structured interview that screens for 20 DSM-IV diagnoses. It was administered according to instructions in the ChIPS/P-ChIPS Administration Manual (Rooney, et al., 1999).

*Procedure*

Participants were recruited for CDIC at their LAMS 12- or 24-month follow-up interview. Potential participants were asked whether they would like to participate in CDIC and were informed that their participation would in no way affect their present or

future participation in LAMS. Participants were also offered $10 in addition to the $50 or $60 for a LAMS 12-month or 24-month follow up, respectively. If both parent and child informants agreed to participate, written consent and assent were obtained. If a child informant was unable to read an assent form, the interviewer read a verbal assent script with the parent present. Parent and child informants were then interviewed separately.

The order of interviews was balanced so the K-SADS was administered before the ChIPS/P-ChIPS half the time and vice versa. All interviews were timed using a stopwatch, and interview duration was recorded to the nearest minute. K-SADS diagnoses were recorded on one form and ChIPS/P-ChIPS diagnoses on another. After each interview, diagnoses were entered into a database, and interview scoring sheets were placed into locked filing cabinets in the LAMS office. Clinician report diagnoses were collected after the LAMS case review meeting between K-SADS interviewers, ChIPS interviewers, and the experienced clinician. These diagnoses were recorded on a summary form and entered into the database. The clinician form was then filed with the other summary diagnosis forms in the locked filing cabinets. Each child's birth date was obtained from his/her LAMS baseline demographics form, and age at the time of CDIC interview was entered into the database.

In the case that a child reported symptoms on the ChIPS or K-SADS but did not meet full criteria for a disorder, the diagnosis was not assigned. It is also important to note that the child portion of the K-SADS is not a stand-alone interview and is not meant to be scored or considered separately from the K-SADS as a whole. However, it was of interest to this study to examine the child interviews separately for the sake of comparison. Diagnoses from the child portion of the K-SADS were based solely on child responses during the K-SADS interview and were assigned by a graduate research

associate trained in the K-SADS. In the case that a child did not participate in a section of the interview, no child diagnosis was reported for that section.

*Interviewers*

Interviewers were graduate and postdoctoral research associates involved in the LAMS study. Throughout CDIC, each interviewer administered both the ChIPS/P-ChIPS and the K-SADS. For every interview, one interviewer was responsible for administering and scoring both parent and child K-SADS, and the other interviewer for the ChIPS/P-ChIPS, which was determined during LAMS scheduling, usually a week before the interview. Interviewers were trained according to the ChIPS/P-ChIPS Administration Manual by a graduate research associate with three years' experience in ChIPS/P-ChIPS administration and one year experience training. Training for interviewers involved review of the training materials by research staff, individual observation and rating of two previous interviews, and group rating of one previous interview. Interviewers' first actual administration of the ChIPS/P-ChIPS was also observed. Interviewers were already trained in administration of the K-SADS as a part of LAMS.

To ensure inter-rater reliability, one interview (4% of the sample) was videotaped and re-rated by all other interviewers. Each interviewer was required to show 100% agreement with other interviewers or undergo further training before they were permitted to conduct another unsupervised interview. At the end of CDIC data collection, five interviews (10% of the sample) will be tested for inter-rater reliability, and interviewers will also be asked to complete a questionnaire about their perception of the strengths and weaknesses of each measure.

## Results

### *Examination of the Dataset*

Participants ranged in age from seven to fourteen, the mean age was 9.96 years (SD ± 2.05). The (7-10) age group consisted of 15 children; ten children were in the (11-14) age group. The sample was 64% male and 36% female, and the racial composition was: 80%=white, 4%=African American, and 16%=mixed/multiple race. Of the mixed/multiple race responders, 3 participants (75%) reported their race as White and African American. These demographics were expected, as they are typical of an outpatient clinical population.

### *Administration Time*

A paired *t*-test was calculated to compare administration times of each interview. Combined ChIPS/P-ChIPS administration time did not differ significantly from K-SADS administration time [mean ± SD (minutes): 96.0 ± 29.9 versus 89.3 ± 29.7, $t = 0.93$, $df = 23$, $p < .36$].[1]

### *Nature of Diagnoses*

In terms of total diagnoses, the ChIPS summary elicited the highest number of responses (80 diagnoses total), and the child K-SADS reported the least (11 diagnoses total). The clinician report elicited 69 diagnoses, or 2.8 diagnoses per child. The following five diagnoses were not computed because they were not reported by any data source throughout the study: Acute Stress Disorder, Dysthymia, Mania, Anorexia, and Bulimia.

### *Inter-rater Reliability*

One interview (4% of the sample) was taped and rated by all nine interviewers. Inter-rater reliability among interviewers was calculated using a generalized Kappa coefficient. Generalized Kappa measures the agreement between multiple data

sources, in contrast to Cohen's Kappa, which measures agreement between only two (Fleiss, Nee, & Landis, 1979). Reliability was found to be high ($K = 0.904$, $p < 0.001$) among raters.

*Hypothesis Testing*

Data were analyzed using a Kappa (κ) coefficient, which measures the level of agreement between two data sources with dichotomous variables. All interviews, as well as the clinician report, are considered data sources in this study. Kappa is an appropriate statistic to use because it corrects for the possibility that two data sources would agree by chance. Labels for strength of agreement were based on a scale developed by Koch and Landis (1977). The scale provides arbitrary cut-off points, but is used as a benchmark to describe the results meaningfully. The labels are as follows (Koch & Landis 1977):

| Kappa Statistic | Agreement |
|---|---|
| <0.00 | Poor |
| 0.00-0.20 | Slight |
| 0.21-0.40 | Fair |
| 0.41-0.60 | Moderate |
| 0.61-0.80 | Substantial |
| 0.81-1.00 | Almost Perfect |

Many Kappa values were incomputable because one or both of the data sources did not report a diagnosis, especially in the comparison between the two child reports. Thus, percent agreements were also calculated for each diagnosis in all comparison groups so a comparison could be made (See Tables 1-4).

Finally, the statistical significance of differences between mean Kappa values was not computed. Because of the small group sizes, the confidence intervals used to determine significance would be considerably wide and likely to overlap, thereby giving an inaccurate depiction of the difference between the two means. These values will be

computed when CDIC is complete and the sample size is large enough to ensure appropriate power for this kind of comparison.

The ChIPS summary versus clinician report comparison showed moderate agreement (Mean $\kappa$ = 0.59) for the (7-10) group and substantial agreement (Mean $\kappa$ = 0.68) for the (11-14) group (See Table 1). This was fairly consistent with Hypothesis 1, which indicated that ChIPS summary diagnoses from both age groups would agree similarly with the clinician report.

The K-SADS and the clinician report demonstrated substantial agreement (Mean $\kappa$ = 0.79) in the younger group and almost perfect agreement (Mean $\kappa$ = 0.84) in the older group (See Table 2). This comparison is consistent with Hypothesis 2 in that both age groups showed high agreement with each other and with the clinician report.

The ChIPS demonstrated fair agreement (Mean $\kappa$ = 0.30) with the K-SADS in the 7-10 year-olds and moderate agreement (Mean $\kappa$ = 0.54) in the 11-14 year-olds (See Table 3). This differs slightly from the prediction of Hypothesis 3 that the ChIPS and K-SADS Summaries would show high agreement with each other. However, these values do suggest an age effect, which was expected.

When compared with the child K-SADS diagnoses, the ChIPS diagnoses showed slight agreement (Mean $\kappa$ = 0.13) in the younger group and moderate agreement (Mean $\kappa$ = 0.43) in the older group (See Table 4). This was expected, however, mean Kappas for this comparison are based on very few (three to four) matching diagnoses. Overall, children reported only 11 diagnoses on the K-SADS (.44 per child) and 35 (1.40 per child) on the ChIPS. Thus, it is important to be cautious when interpreting these results since few diagnoses were reported at all.

## Discussion

Kappa values showed higher agreement between the K-SADS and the clinician report than the ChIPS summary and clinician report in both age groups. While this difference was not overwhelming, it was not predicted by Hypotheses 1 and 2. However, it is important to use caution when interpreting these results due to the small sample size.

The ChIPS was developed specifically to be age-appropriate for children and therefore was expected to accurately elicit responses from children. The K-SADS' higher agreement with clinician report could be a result of its inherent flexibility; the interviewer has the freedom to deviate from the original questions as necessary to obtain more information. As stated earlier, semi-structured interviews were developed to elicit general information about an informant, such as coping strategy, personality characteristics, and wide range of feelings, in addition to symptoms and impairment. These are extraneous variables that a clinician would also consider when assigning diagnoses, but may not be reported in the highly structured format of the ChIPS. Therefore, ChIPS responses may have been accurate as far as behaviors and symptoms, but those symptoms could be subsumed under another diagnosis or present only in certain circumstances. While the clinician would consider all these factors, the format of the ChIPS could make it more difficult to differentiate between overlapping diagnoses. Because questions are yes/no format, an informant could endorse several symptoms, but they may only occur in certain contexts, which may be more difficult to detect without further questioning (i.e. deviating from the question set). Further, the ChIPS is designed for diagnostic screening and therefore would be expected to elicit some false positive diagnoses, which can be further followed up by the clinician in exchange for the reduction of false negatives. The K-SADS is designed as a

comprehensive diagnostic assessment, so the expected false positives from the ChIPS summary could also account for the K-SADS' slightly higher agreement with the clinician report.

There was little to no difference between age groups when comparing each interview to the clinician report. This was expected because: a) the K-SADS Summary depends heavily on parent report for its summary diagnosis, and b) the child interview should not negatively affect the ChIPS summary since the ChIPS was designed for young children and should be age-appropriate. Although it is still uncertain whether the ChIPS diagnoses agreed with those of the clinician, it seems this is the case since no age affect was found between interviews and clinician report.

The ChIPS showed fair agreement ($\kappa = 0.30$) with the K-SADS in the younger group and moderate agreement ($\kappa = 0.54$) in the older group. These results suggest an age effect between groups, as predicted in Hypothesis 3. Again, because the ChIPS is intended to be age-appropriate, groups should not differ in performance on the ChIPS. However, wording and vocabulary matter less for children with more developed language skills, so older children would be better able to report accurately on the K-SADS and therefore agree more highly with the ChIPS than the younger group.

Finally, ChIPS versus child K-SADS diagnoses support the prediction of Hypothesis 4 that agreement will be low to moderate in both groups but higher in the (11-14) age group. However, few diagnoses were reported, so it is important be cautious when drawing conclusions about agreement between the two measures. However, there was an interesting finding when looking at the data overall. The child K-SADS data had a total of only 11 diagnoses, or 0.44 diagnoses per child. In contrast, the ChIPS had a total of 35 diagnoses, (1.40 diagnoses per child). Thus, the ChIPS obtains more responses from children than the K-SADS does. It is still unclear from

these data whether the additional responses obtained from the ChIPS are valid, as agreement with the clinician report was better for the K-SADS. Further research with a larger sample may help determine whether ChIPS diagnoses agreed with the clinician report. Along with the other findings in this study, more data involving the agreement of the ChIPS with clinician report may have implications for the ChIPS as a valuable diagnostic tool when assessing the child informant alone.

Further, the fact that the child portion of the K-SADS elicited so few total diagnoses raises the question of how effective semi-structured interviews can actually be when used with children. Since they are currently considered the best way to assess children because of the flexibility they allow, it is interesting that children in this study were not able to give more responses. This reinforces the idea that diagnostic interviews for children need more testing and standardization in order to improve their ability to assess children.

One limitation is that the study's sample size was too small to examine the data in greater detail. Specifically, it was not possible to note differences between age groups for each diagnosis or gender. Also, there were several cases in which one data source (clinician or interview) did not report any diagnoses, so Kappas could not be calculated for some of the data. This study will be continued to obtain a sample of 50 parent-child pairs, which will increase power (0.8 with $\alpha$ of 0.05) and the ability to detect significant difference.

In addition to the continuation of this study and the more specific comparisons that follow, future research could include testing the ChIPS for use with populations other than those at high risk for developing bipolar disorder. Specifically, it would be helpful to obtain data on participants who have diagnoses not reported in this study (i.e. Acute Stress Disorder, Dysthymia, Mania, Anorexia, and Bulimia).

Further, it would be helpful to conduct this study with an independent clinician who has not seen the ChIPS or the K-SADS. In this study, the interviews were used as tools to give the clinician information about each child's symptoms. However, because the clinician has seen results from both interviews, there is potential for bias in the clinician report. It would be of interest to examine whether independent clinician rating changes the diagnoses in the clinician report, thereby changing agreement with each interview.

# Appendix A: ChIPS/K-SADS Shared Disorders

| Diagnostic Category | Diagnosis |
|---|---|
| Disruptive Behavior Disorders | Oppositional Defiant Disorder |
| | Conduct Disorder |
| Anxiety Disorders | Specific Phobia |
| | Social Phobia |
| | Separation Anxiety Disorder |
| | Generalized Anxiety Disorder |
| | Obsessive-Compulsive Disorder |
| Stress Disorders | Posttraumatic Stress Disorder |
| | Acute Stress Disorder |
| Eating Disorders | Anorexia Nervosa |
| | Bulimia Nervosa |
| Depressive Disorders | Major Depressive Disorder |
| | Dysthymia |
| Bipolar Disorders | Mania |
| | Hypomania |
| Elimination Disorders | Enuresis |
| | Encopresis |
| Other | Attention-Deficit/Hyperactivity Disorder |
| | Substance Abuse (including alcohol) |
| | Schizophrenia |
| | Psychosis |

Appendix B: Sample Section of the K-SADS with Scoring Sheet

## ATTENTION DEFICIT HYPERACTIVITY DISORDER

**Determine the age of onset for first positively endorsed ADHD symptom. If symptom has persisted since early childhood, use the current rating to describe the symptom's most intense severity over the past year. Score symptom as 'not present' in the past unless prior episode of symptomatology was followed by a period of six months or more in which the child was free of ADHD problems.**

**Probe:** ***For how long has___ been a problem? Has it been a problem since kindergarten? First grade? Did the problem start even earlier?***

1. Difficulty Sustaining Attention on Tasks or Play Activities

*Has there ever been a time when you had trouble paying attention in school? Did it affect your school work? Did you get into trouble because of this? When you were working on your homework, did your mind wander? What about when you were playing games? Did you forget to go when it was your turn?*

**Note: Rate based on data reported by informant or observational data.**

| P | C | S | |
|---|---|---|---|
| 0 | 0 | 0 | No information |
| 1 | 1 | 1 | Not present. |
| 2 | 2 | 2 | Subthreshold: Occasionally has difficulty sustaining attention on tasks or play activities. Problem has only minimal effect on functioning. |
| **3** | **3** | **3** | Threshold: Often has difficulty sustaining attention. Problem has moderate to severe effect on functioning. |

**PAST:** _____ _____ _____
**P C S**

2. Easily Distracted

*Was there ever a time when little distractions would make it very hard for you to keep your mind on what you were doing? Like if another kid in class asked the teacher a question while the class was working quietly, was it ever hard for you to keep your mind on your work? When there was an interruption, like when the phone rang, was it hard to get back to what you were doing before the interruption? Were there times when you could keep your mind on what you are doing, and little noises and things didn't bother you? How often were they a problem?*

**Note: Rate based on data reported by informant or observational data.**

| P | C | S | |
|---|---|---|---|
| 0 | 0 | 0 | No information |
| 1 | 1 | 1 | Not present. |
| 2 | 2 | 2 | Subthreshold: Occasionally forgetful. Problem has only minimal effect on functioning. |
| **3** | **3** | **3** | Threshold: Attention often disrupted by minor distractions other kids would be able to ignore. Problem has moderate to severe effect on functioning. |

**PAST:** _____ _____ _____
**P C S**

3. Difficulty Remaining Seated

*Was there ever a time when you got out of your seat a lot at school? Did you get into trouble for this? Was it hard to stay in your seat at school? What about dinner time?*

**Note: Rate based on data reported by informant or observational data.**

| P | C | S | |
|---|---|---|---|
| 0 | 0 | 0 | No information |
| 1 | 1 | 1 | Not present. |
| 2 | 2 | 2 | Subthreshold: Occasionally has difficulty remaining seated when required to do so. Problem has only minimal effect on functioning. |
| **3** | **3** | **3** | Threshold: Often has difficulty remaining seated when required to do so. Problem has moderate to severe effect on functioning. |

**PAST:** _____ _____ _____
**P C S**

4. Impulsivity

*Do you act before you think, or think before you act? Has there ever been a time when these kinds of behaviors got you into trouble? Give some examples.*

| P | C | S | |
|---|---|---|---|
| 0 | 0 | 0 | No information |
| 1 | 1 | 1 | Not present. |
| 2 | 2 | 2 | Subthreshold: Occasionally impulsive. Problem has only minimal effect on functioning. |
| **3** | **3** | **3** | Threshold: Often impulsive. Problem has moderate to severe effect on functioning. |

**PAST:** _____ _____ _____
**P C S**

**____IF RECEIVED A SCORE OF 3 ON THE CURRENT RATINGS OF ANY OF THE PREVIOUS ITEMS, COMPLETE THE ATTENTION DEFICIT HYPERACTIVITY DISORDER (CURRENT) SECTION IN SUPPLEMENT #3, BEHAVIORAL DISORDERS, AFTER COMPLETING THE SCREEN INTERVIEW.**

**____IF RECEIVED A SCORE OF 3 ON THE PAST RATINGS OF ANY OF THE PREVIOUS ITEMS, COMPLETE THE ATTENTION DEFICIT HYPERACTIVITY DISORDER (PAST) SECTION IN SUPPLEMENT #3, BEHAVIORAL DISORDERS, AFTER COMPLETING THE SCREEN INTERVIEW.**

**____NO EVIDENCE OF ATTENTION DEFICIT DISORDER.**

**NOTES: (Record dates of possible current and past Attention Deficit Hyperactivity Disorder).**





**ATTENTION DEFICIT HYPERACTIVITY DISORDER**

**1. Makes a lot of Careless Mistakes**

*Do you make a lot of careless mistakes at school? Do you often get problems wrong on tests because you didn't read the instructions right? Do you often leave some questions blank by accident? Forget to do the problems on both sides of a handout? How often do these types of things happen? Has your teacher ever said you should pay more attention to detail?*

**P C S**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally makes careless mistakes. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often makes careless mistakes. Problem has moderate to severe effect on functioning.

**PAST:** $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

**2. Doesn't Listen**

*Is it hard for you to remember what you parents and teachers say? Do your parents or teachers complain that you don't listen to them when they talk to you? Do you "tune people out?" Do you get into trouble for not listening?*

**Rate based on data reported by informant or observational data.**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally does not listen. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often does not listen. Problem has moderate to severe effect on functioning.

**PAST:** $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

**3. Difficulty Following Instructions**

*Do your teachers complain that you don't follow instructions? When your parents or your teacher tell you to do something, is it sometimes hard to remember what they said to do? Does it get you into trouble? Do you lose points on your assignments for not following directions or not completing the work? Do you forget to do your homework or forget to turn it in? Do you get into trouble at home for not finishing your chores or other things your parents ask you to do? How often?*

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally has difficulty following instructions. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often has difficulty following instructions. Problem has moderate to severe effect on functioning.

**PAST:** $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

**4. Difficulty Organizing Tasks**

*Is your desk or locker at school a mess? Does it make it hard for you to find the things you need? Does your teacher complain that your assignments are messy or disorganized? When you do your worksheets, do you usually start at the beginning and do all the problems in order, or do you like to skip around? Do you often miss problems? Do you have a hard time getting ready for school in the morning?*

**P C S**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally disorganized. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often disorganized. Problem has moderate to severe effect on functioning.

**PAST:** $\overline{P}$ $\overline{C}$ $\overline{S}$

**5. Dislikes/Avoids Tasks Requiring Attention**

*Are there some kinds of school work you hate doing more than others? Which ones? Why? Do you try to get out of doing your _____ assignments? Do you pretend to forget about your _____ homework to get out of doing it? About how many times a week do you not do your _____ homework?*

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally avoids tasks that require sustained attention, and/or expresses mild dislike for these tasks. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often avoids tasks that require sustained attention, and/or expresses moderate dislike for these tasks. Problem has moderate to severe effect on functioning.

**PAST:** $\overline{P}$ $\overline{C}$ $\overline{S}$

**6. Loses Things**

*Do you lose things a lot? Your pencils at school? Homework assignments? Things around the home? About how often does this happen?*

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally loses things. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often loses things (e.g. once a week or more). Problem has moderate to severe effect on functioning.

**PAST:** $\overline{P}$ $\overline{C}$ $\overline{S}$

**7. Forgetful in Daily Activities**

*Do you often leave your homework at home, or your books or coats on the bus? Do you leave your things outside by accident? How often do these things happen? Has anyone ever complained that you are too forgetful?*

**P C S**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally forgetful. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often forgetful. Problem has moderate to severe effect on functioning.

**PAST:** $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

**8. Fidget**

*Do people often tell you to sit still, to stop moving, or stop squirming in your seat? Your teachers? Parents? Do you sometimes get into trouble for squirming in your seat or playing with little things at your desk? Do you have a hard time keeping your arms and legs still? How often?*

**Rate based on data reported by informant or observational data.**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally fidgets with hands or feet or squirms in seat. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often fidgets with hands or feet or squirms in seat (e.g. At least 50% of the time). Problem has moderate to severe effect on functioning.

**PAST:** $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

**9. Runs of Climbs Excessively**

*Do you get into trouble for running down the hall in school? Does your mom often have to remind you to walk instead of run when you are out together? Do your parents or your teacher complain about you climbing things you shouldn't? What kinds of things? How often does this happen?*

**Adolescents:** Do you feel restless a lot? Feel like you have to move around, or that it is very hard to stay in one place?

**Rate based on data reported by informant or observational data.**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally runs about or climbs excessively. Problem has only minimal effect on functioning. (In adolescents, may be limited to a subjective feeling of restlessness.)

**3 3 3** Threshold: Often runs about or climbs excessively. Problem has moderate to severe effect on functioning. (In adolescents, may be limited to a subjective feeling of restlessness.)

**PAST:** $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

**10. On the Go/Acts Like Driven by Motor**

*Is it hard for you to slow down? Can you stay in one place for long, or are you always on the go? How long can you sit and watch TV or play a game? Do people tell you to slow down a lot?*

**P C S**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally, minimal effect on functioning.

**3 3 3** Threshold: Often acts as if "driven by a motor." Moderate to severe effect on functioning.

**PAST:** $\overline{P}$ $\overline{C}$ $\overline{S}$

**11. Difficulty Playing Quietly**

*Do your parents or teachers often tell you to quiet down when you are playing? Do you have a hard time playing quietly?*

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally has difficulty playing quietly. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often has difficultly playing quietly. Problem has moderate to severe effect on functioning.

**PAST:** $\overline{P}$ $\overline{C}$ $\overline{S}$

**12. Blurts out Answers**

*At school, do you sometimes call out the answers before you are called on? Do you talk out of turn at home? Answer questions your parents ask your siblings? How often?*

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally talks out of turn. Problem has only minimal effect on functioning.

**3 3 3** Threshold:. Often talks out of turn (e.g. daily or nearly daily). Problem has moderate to severe effect on functioning.

**PAST:** $\overline{P}$ $\overline{C}$ $\overline{S}$

**13. Difficulty Waiting Turn**

*Is it hard for you to wait your turn in games? What about in line in the cafeteria or at the water fountain?*

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally has difficulty waiting his/her turn. Problem has only minimal effect on functioning.

**3 3 3** Threshold: Often has difficulty waiting his/her turn. Problem has moderate to severe effect on functioning.

**PAST:** $\overline{P}$ $\overline{C}$ $\overline{S}$

**14. Interrupts or Intrudes**

*Do you get into trouble for talking out of turn in school? Do your parents, teachers, or any of the kids you know complain that you cut them off when they are talking? Do kids complain that you break in on games? Does this happen a lot?*

**Rate based on data reported by informant or observational data.**

**P C S**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally interrupts others.

**3 3 3** Threshold: Often interrupts others.

**PAST:** $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

**16. Talks Excessively**

*Do people say you talk too much? Do you get into trouble at school for talking when you are not supposed to? Do people in your family complain that you talk too much?*

**Rate based on data reported by informant or observational data.**

0 0 0 No information.

1 1 1 Not present.

2 2 2 Subthreshold: Occasionally talks excessively.

**3 3 3** Threshold:. Often talks excessively.

**PAST:** $\overline{\text{P}}$ $\overline{\text{C}}$ $\overline{\text{S}}$

| EPISODE CODING KEY: | CE = CURRENT EPISODE | P12 = PAST 12 MONTHS |
|---|---|---|

| | | Criteria | Parent CE | Parent P12 | Child CE | Child P12 | Summary CE | Summary P12 |
|---|---|---|---|---|---|---|---|---|
| 18. | Duration | | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 |
| | *For how long have you had trouble (list symptoms that were positively endorsed)?* | 6 months or more | | | | | | |
| 19. | Age of onset | | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 |
| | *How old were you when you first started having trouble (list symptoms)? Did you have these problems in kindergarten? First Grade?* | Onset before age 7 | | | | | | |
| 20. | Impairment | | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 |
| | a. Socially (with peers): | | | | | | | |
| | _____ | | | | | | | |
| | b. With Family: | | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 |
| | _____ | | | | | | | |
| | c. In School: | | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 | 0 1 2 |
| | _____ | | | | | | | |

| | | Summary CE | Summary P12 |
|---|---|---|---|
| 21. | ADHD (DSM-IV-TR) | 0 1 2 | 0 1 2 |
| | A. Either i or ii: | | |
| | Inattention | | |
| | i. Meets criteria for at least six of the following nine symptoms: | | |
| | 1) Makes a lot of Careless Mistakes | | |
| | 2) Difficulty Sustaining Attention on Tasks or Play Activities | | |
| | 3) Doesn't Listen | | |
| | 4) Difficulty Following Instructions | | |
| | 5) Difficulty Organizing Tasks | | |
| | 6) Dislikes/Avoids Tasks Requiring Attention | | |
| | 7) Loses Things | | |
| | 8) Easily Distracted | | |
| | 9) Forgetful in Daily Activities | | |

| CODING KEY: | 0 = NO INFORMATION | 1 = NO | 2 = YES |
|---|---|---|---|

| EPISODE CODING KEY: | CE = CURRENT EPISODE | P12 = PAST 12 MONTHS |
|---|---|---|

| | | Summary CE | Summary P12 |
|---|---|---|---|
| OR | Hyperactivity/Impulsivity | | |
| | ii. Meets Criteria for at least six or more of the following nine symptoms:<br><br>1) Fidgets<br>2) Difficulty Remaining Seated<br>3) Runs or Climbs Excessively<br>4) Difficulty Playing Quietly<br>5) On the go/Acts as if Driven by a Motor<br>6) Talks Excessively<br>7) Blurts Out Answers<br>8) Difficulty Waiting Turn<br>9) Often Interrupts or intrudes<br><br>B. Duration of symptoms 6 months or longer;<br>C. Some symptoms that caused impairment present before age of 7;<br>D. Some impairment from symptoms must be present in two or more situations (e.g. school and home)<br>E. Clinically significant impairment; and<br>F. Does not meet criteria for Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder). | | |
| 22. | Predominately Inattentive Type<br><br>Meets criterion for Ai, but not criterion for Aii for past six months | 0 1 2 | 0 1 2 |
| 23. | Predominately Hyperactive-Impulsive Type<br><br>Meets criterion for Aii, but not criterion for Ai for past six months | 0 1 2 | 0 1 2 |
| 24. | Combined Type<br><br>Both criterion Ai and Aii are met for past six months | 0 1 2 | 0 1 2 |
| 25. | Attention-Deficit Hyperactivity Disorder NOS<br><br>Prominent symptoms of inattention or hyperactivity-impulsivity that do not meet criteria for Attention Deficit/Hyperactivity Disorder. | 0 1 2 | 0 1 2 |

| CODING KEY: | 0 = NO INFORMATION | 1 = NO | 2 = YES |
|---|---|---|---|

Appendix C:  Sample Section of the ChIPS with Scoring Sheet

# Attention-Deficit/Hyperactivity Disorder

## Preface

**Sometimes children/teenagers behave in a way that causes problems at home or at school. I'm going to ask you about some problems, and I want you to tell me if they have ever happened to you.**

## Probe

If child says "sometimes" or is equivocal about an answer, ask: **Has that happened so much that it caused you problems at home or at school, like getting yelled at a lot or punished?**

| **Note:** Score only if behavior occurs more often than in other children/teenagers of same age. |
|---|

## Section A: Inattention

1. a) **Do you often have trouble paying attention to details?** If yes, go to 2.
   b) **Do you frequently make a lot of careless mistakes in your schoolwork?**
2. **Do you often have trouble keeping your mind on what you're doing (for example, a game, schoolwork, or a project)?**
3. a) **Do your parents often say that you're not listening to them?** If yes, go to 4.
   b) **Do your teachers often say that you're not listening?**
4. a) **Do you frequently have trouble finishing things you start, like chores or schoolwork?** If yes, go to 5.
   b) **Do you often start your schoolwork and not finish it?** If yes, go to 5.
   c) **Do you frequently go from one thing to another without finishing anything?**

| If none of the above are endorsed, go to Section B. |
|---|

5. **Do you frequently have trouble organizing yourself (for example, to do things you want to do, or to complete projects)?**
6. **Do you often avoid your schoolwork or homework?**
7. **Do you lose your papers, books, or pencils a lot?**
8. a) **Do you often have trouble sticking to what you are doing when other things are going on around you?** If yes, go to 9.
   b) **Does your teacher frequently say you don't pay attention or that you daydream?**
9. a) **Do you often forget things?** If yes, go to Section B.
   b) **Do your parents or teachers often tell you that you are forgetful?**

## Section B: Hyperactivity–Impulsivity

1. a) **Are you told to sit still a lot?** If yes, go to 2.
   b) **Do you move your hands or feet a lot even when you're trying to sit still?**
2. a) **Do you have trouble staying in your seat (for example, in school or at the dinner table)?** If yes, go to 3.
   b) **Do you get in trouble for getting out of your chair at home or at school?**
3. **Do you get in trouble a lot for running or climbing?**
4. a) **Do you get in trouble a lot for being too loud when you play [entertain yourself]?** If yes, go to 5.
   b) **Is it hard for you to play [entertain yourself] quietly?**

| If no questions in Sections A and B are endorsed, go to the next disorder. |
|---|

5. **Do parents or teachers say that you are always "on the go" or that you always have to be doing something?**
6. a) **Do you talk out of turn at school so much you get in trouble?** If yes, go to 7.
   b) **Do you get in trouble for talking too much at home?**
7. **Do you often blurt out answers to questions before they have been completed?** (Rate as "yes" if this occurs during the interview, even if the child says "no.")
8. a) **Do you try to push ahead when you are in line?** If yes, go to 9.
   b) **Do you have trouble waiting for your turn in a game?**
9. a) **Do you barge in on other kids' games a lot?** If yes, go to Duration questions.
   b) **Do you push your way into groups?** If yes, go to Duration questions.
   c) **Do you interrupt people when they are doing things?**

## Criteria

If ≥6 are endorsed in Section A, Section B, or both section(s), criteria have been met for Attention-Deficit/Hyperactivity Disorder. Indicate subtype as follows:

- Predominantly Inattentive: ≥6 endorsed in Section A
- Predominantly Hyperactive–Impulsive: ≥6 endorsed in Section B
- Combined: ≥6 endorsed both in A and in B

Mark the "criteria met" box and continue with Duration questions.

**Note:** Interviewer may already know answers to Duration and Impairment questions based on child's previous comments.

## Duration

1. **When did [__] (referring to symptoms endorsed in Sections A and B) begin?** Record age in years.
2. **Are you still having trouble with [__]?** If no, record age when symptoms stopped. If yes, record current age.
3. **Has this been going on for at least 6 months?** Record actual number of months.

If onset is before age 7, symptoms are still present, and duration is ≥6 months, mark the "*DUR met for ADHD" box.

## Impairment

**Do these problems cause you trouble . . .**

1. **at home?**
2. **at school?**
3. **with other kids?**

**ADHD**

A. Inattention
1. <a> <b>
2. < >
3. <a> <b>
4. <a> <b> <c>
5. < >
6. < >
7. < >
8. <a> <b>
9. <a> <b>

B. Hyperactivity–Impulsivity
1. <a> <b>
2. <a> <b>
3. < >
4. <a> <b>
5. < >
6. <a> <b>
7. < >
8. <a> <b>
9. <a> <b> <c>

**Criteria**

If ≥6 in *A only*, then criteria met
Inattentive < >

If ≥6 in *B only*, then criteria met
Hyperactive–Impulsive < >

If ≥6 in A *and* ≥6 in B,
then criteria met
Combined < >

**Duration**

1. _____ (years old)
2. < > _____ (years old)
3. < > _____ (months)

* DUR met for ADHD < >

**Impairment**

1. < > home
2. < > school
3. < > peers

## Footnotes

[1]K-SADS mean administration times were based on 24 interviews rather than 25 because of a missing page of data.

**Table 1.**

## Concordance for ChIPS Summary Compared with Clinician Report

| | (7-10) | | (11-14) | |
|---|---|---|---|---|
| *Dx* | *Kappa* | *% Agreement* | *Kappa* | *% Agreement* |
| ADHD | **0.63** | 93% | *0.52* | 80% |
| ODD | 0.15 | 53% | 0.07 | 50% |
| CD | **0.63** | 93% | ** | 90% |
| SUBAB | *** | 93% | * | 100% |
| PHO | **1.00** | 100% | **0.62** | 90% |
| SOCPHO | ** | 93% | **1.00** | 100% |
| SEPANX | **0.63** | 93% | *0.52* | 80% |
| GAD | *0.42* | 87% | **0.74** | 90% |
| OCD | * | 100% | **1.00** | 100% |
| PTSD | **0.63** | 93% | * | 100% |
| ASD | ^ | ^ | ^ | ^ |
| MDD | 0.29 | 80% | **1.00** | 100% |
| DYS | ^ | ^ | ^ | ^ |
| MAN | ^ | ^ | ^ | ^ |
| HYPOMAN | -0.07 | 93% | *** | 90% |
| ENU | **1.00** | 100% | * | 100% |
| ENCO | **0.76** | 93% | * | 100% |
| ANO | ^ | ^ | ^ | ^ |
| BUL | ^ | ^ | ^ | ^ |
| SCZ | ** | 93% | * | 100% |
| PSY | **1.00** | 93% | ** | 80% |
| **Mean κ** | 0.59 | | 0.68 | |

* κ not computed because no diagnosis given

** κ not computed because diagnosis not reported by clinician

*** κ not computed because diagnosis not reported by ChIPS Summary

^ κ not computed because disorder was not present in the whole study

**Table 2.**

## Concordance for K-SADS Compared with Clinician Report

| | *(7-10)* | | *(11-14)* | |
|---|---|---|---|---|
| *Dx* | *Kappa* | *% Agreement* | *Kappa* | *% Agreement* |
| ADHD | **1.00** | 100% | **0.78** | 90% |
| ODD | *0.41* | 73% | *0.55* | 80% |
| CD | ** | 93% | * | 100% |
| SUBAB | ** | 93% | * | 100% |
| PHO | **0.66** | 87% | **1.00** | 100% |
| SOCPHO | * | 100% | **0.62** | 90% |
| SEPANX | ** | 93% | **1.00** | 100% |
| GAD | **0.63** | 93% | **1.00** | 80% |
| OCD | * | 100% | **0.62** | 90% |
| PTSD | **0.63** | 93% | * | 100% |
| ASD | ^ | ^ | ^ | ^ |
| MDD | **0.76** | 93% | **1.00** | 100% |
| DYS | ^ | ^ | ^ | ^ |
| MAN | ^ | ^ | ^ | ^ |
| HYPOMAN | **1.00** | 100% | **1.00** | 100% |
| ENU | **1.00** | 100% | * | 100% |
| ENCO | **1.00** | 100% | * | 100% |
| ANO | ^ | ^ | ^ | ^ |
| BUL | ^ | ^ | ^ | ^ |
| SCZ | * | 100% | * | 100% |
| PSY | ** | 93% | * | 100% |
| **Mean κ** | 0.79 | | 0.84 | |

* κ not computed because no diagnosis given

** κ not computed because diagnosis not reported by ChIPS Summary

^ κ not computed because disorder was not present in the whole study

**Table 3.**

## Concordance for ChIPS Summary Compared with K-SADS

| | *(7-10)* | | *(11-14)* | |
|---|---|---|---|---|
| *Dx* | *Kappa* | *% Agreement* | *Kappa* | *% Agreement* |
| ADHD | **0.63** | 93% | 0.35 | 70% |
| ODD | 0.02 | 40% | -0.13 | 30% |
| CD | *** | 100% | *** | 90% |
| SUBAB | * | 100% | * | 100% |
| PHO | **0.66** | 87% | **0.62** | 90% |
| SOCPHO | *** | 93% | **0.62** | 90% |
| SEPANX | *** | 87% | *0.52* | 80% |
| GAD | -0.10 | 80% | **0.74** | 90% |
| OCD | * | 100% | **0.62** | 90% |
| PTSD | -0.07 | 87% | * | 100% |
| ASD | ^ | ^ | ^ | ^ |
| MDD | -0.15 | 73% | **1.00** | 100% |
| DYS | ^ | ^ | ^ | ^ |
| MAN | ^ | ^ | ^ | ^ |
| HYPOMAN | -0.07 | 87% | ** | 90% |
| ENU | **1.00** | 100% | * | 100% |
| ENCO | **0.76** | 93% | * | 100% |
| ANO | ^ | ^ | ^ | |
| BUL | ^ | ^ | ^ | |
| SCZ | *** | 93% | * | 100% |
| PSY | *** | 93% | *** | 80% |
| **Mean κ** | 0.30 | | 0.54 | |

* κ not computed because no diagnosis given
** κ not computed because diagnosis not reported by ChIPS Summary
*** κ not computed because diagnosis not reported by K-SADS
^ κ not computed because disorder was not present in the whole study

**Table 4.**

## Concordance for ChIPS Compared with Child Portion of K-SADS

| | *(7-10)* | | *(11-14)* | |
|---|---|---|---|---|
| *Dx* | *Kappa* | *% Agreement* | *Kappa* | *% Agreement* |
| ADHD | -0.13 | 60% | ** | 90% |
| ODD | *** | 73% | -0.18 | 60% |
| CD | *** | 93% | * | 100% |
| SUBAB | * | 100% | * | 100% |
| PHO | -0.07 | 87% | *** | 80% |
| SOCPHO | *** | 93% | *** | 80% |
| SEPANX | *** | 93% | 0.41 | 80% |
| GAD | *** | 93% | **0.62** | 90% |
| OCD | * | 100% | **1.00** | 100% |
| PTSD | * | 100% | * | 100% |
| ASD | ^ | ^ | ^ | ^ |
| MDD | *** | 93% | *** | 90% |
| DYS | ^ | ^ | ^ | ^ |
| MAN | ^ | ^ | ^ | ^ |
| HYPOMAN | * | 100% | * | 100% |
| ENU | **0.58** | 87% | * | 100% |
| ENCO | ** | 93% | * | 100% |
| ANO | ^ | ^ | ^ | ^ |
| BUL | ^ | ^ | ^ | ^ |
| SCZ | *** | 93% | * | 100% |
| PSY | *** | 93% | *** | 90% |
| **Mean κ** | 0.13 | | 0.46 | |

* κ not computed because no diagnosis given

** κ not computed because diagnosis not reported on ChIPS

*** κ not computed because diagnosis not reported on Child Portion of K-SADS

^ κ not computed because disorder was not present in the whole study

References

Achenbach, T. M. (2005). Advancing assessment of children and adolescents: Commentary on evidence-based assessment of child and adolescent disorders. *Journal of Clinical Child and Adolescent Psychology, 34,* 541-547.

Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/Adolescent Behavioral and Emotional Problems: Implications of Cross-Informant Correlations for Situational Specificity. *Psychological Bulletin, 101(2)*, 213-232.

Ambrosini, P. J. (2000). Historical development and present status of the schedule for affective disorders and schizophrenia for school-age children (K-SADS). *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*, 49-58.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders: DSM-III*. (3rd ed.). Washington, DC: Author.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders: DSM-III-R*. (3rd ed., Revised). Washington, DC: Author.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders: DSM-IV*. (4th ed.). Washington, DC: Author.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR*. (4th ed., text revision). Washington, DC: Author.

Angold, A., & Costello, J. (2000). The child and adolescent psychiatric assessment (CAPA). *Journal of the American Academy of Child and Adolescent Psychiatry*, *39*, 39-48.

Axelson, D., Birmaher, B. J., Brent, D., Wassick, S., Hoover, C., Bridge, J. et al. (2003). A preliminary study of the kiddie schedule for affective disorders and schizophrenia for school-age children mania rating scale for children and adolescents. *Journal of Child and Adolescent Psychopharmacology*, *13*, 463-470.

Chambers, W.J., Puig-Antich, J., Hirsch, M., Paez, P., Ambrosini, P.J., Tabrizi, M.A. & Davies, M. (1985). The assessment of affective disorders in children and adolescents by semi structured interview. Test-retest reliability of the schedule for affective disorders and schizophrenia for school-age children, present episode version. *Archives of General Psychiatry, 42,* 696-702.

Cox, A., Hopkinson, K., Rutter, M. (1981). Psychiatric Interviewing Techniques II. Naturalistic Study: Eliciting factual information. *British Journal of Psychiatry, 138*, 283-291.

DelBello, M. P., Adler, C. M., Whitsel, R. M., Stanford, K. E., & Strakowski, S. M. (2007). A 12-week single-blind trial of quetiapine for the treatment of mood symptoms in adolescents at high risk for developing bipolar I disorder. *Journal of Clinical Psychiatry, 68,* 789-795.

Edelbrock, C., & Costello, A. J. (1990). Structured interviews for children and adolescents. *Handbook of Psychological Assessment (2nd ed.)*. Elmsford: Pergamon Press.

Endicott, J., & Spitzer, L. (1978). A diagnostic interview: The schedule for affective disorders and schizophrenia. *Archives of General Psychiatry*, *35*, 837-844.

Fleiss, J. L., Nee, J. C. M., & Landis,J. R. (1979). Large sample variance of kappa in the case of different sets ofraters. *Psychological Bulletin, 86,* 974-977.

Fristad, M., Cummins, J., Verducci, J., Teare, M., Weller, E. & Weller, R. A. (1998). Study IV: Concurrent validity of the DSM-IV revised children's interview for psychiatric syndromes (ChIPS). *Journal of Child and Adolescent Psychopharmacology*, *8*, 227-236.

Fristad, M., Glickman, A., Verducci, J., Teare, M., Weller, E. & Weller, R. A. (1998). Study V: Children's interview for psychiatric syndromes (ChIPS): Psychometrics in two community samples. *Journal of child and adolescent psychopharmacology, 8,* 237-245.

Fristad, M., Teare, M., Weller, E., Weller, R. & Salmon, P. (1998). Study III: Development and concurrent validity of the children's interview for psychiatric syndromes-Parent version (P-ChIPS). *Journal of Child and Adolescent Psychopharmacology*, *8*, 221-226.

Geller, B., Williams, M., Zimmerman, B., & Frazier, J. (1996). Washington University in St. Louis Kiddie Schedule for Affective Disorders and Schizophrenia (Wash-U-KSADS). St. Louis: Washington University.

Harris, J.R., & Liebert, R.M. (1987). *The Child: Development From Birth to Adolescence,* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Herjanic, B., Herjanic, M., Brown, F., & Wheatt, T. (1975). Are Children Reliable Reporters? *Journal of Abnormal Child Psychology*, *3*, 41-48.

Kaufman, J., Birmaher, B., Brent, D., Rao, U., Flynn, C., Moreci, P., Williamson, D. & Ryan, N. (1997). Schedule for Affective Disorders and Schizophrenia for school-age children-present and lifetime version (K-SADS-PL): Initial reliability and validity data. *Journal of the American Academy of Child & Adolescent Psychiatry*, *36*, 980-988.

Kestenbaum, C. J. (2006). The Clinical Interview of the Child. *Essentials of Child and Adolescent Psychiatry*. Arlington: American Psychiatric Publishing, Inc.

Landis, J. R., & Koch, G. G. (1977). The Measurement of Observer Agreement for Categorical Data. *Biometrics, 33*, 159-174.

Lingler, J., Bedoya, D., & Findling, R. L. (2007, January). *The Kiddie-SADS Present and Lifetime Version Plus (K-SADS-PL-W).* [Unpublished measure] Department of Psychiatry, University Hospitals of Cleveland, Case Western Reserve University, Cleveland, OH.

Mash, E. J. & Hunsley, J. (2005). Evidence-Based Assessment of Child and Adolescent Disorders: Issues and Challenges. *Journal of Clinical Child and Adolescent Psychology, 34*, 362-379.

McConaughy, S. H. (2000). Self-Report: Child Clinical Interviews. *Conducting School-Based Assessments of Child and Adolescent Behavior*. New York: The Guilford Press.

Nottelmann, E., Biederman, J., Birmaher, B., Carlson, G. A., Chang, K., A., Fenton, W. S., et al. (2001). National Institute of Mental Health research roundtable on prepubertal bipolar disorder. *Journal of the American Academy of Child and Adolescent Psychiatry, 40,* 871-878.

Puig-Antich, J., & Chambers, W. (1978). *The schedule for affective disorders and schizophrenia for school-age children (Kiddie-SADS).* New York: New York State Psychiatric Institute.

Puig-Antich, J., & Ryan, N. (1986). *The schedule for affective disorders and schizophrenia for school-age children (Kiddie-SADS)-1986.* Pittsburgh: Western Psychiatric Institute and Clinic.

Rooney, M. T., Fristad, M. A., Weller, E. B., & Weller, R. A. (1999). *Administration manual for the Children's Interview for Psychiatric Syndromes (ChIPS).* Washington, D.C.: American Psychiatric Press, Inc.

Teare, M., Fristad, M., Weller, E., Weller, R. & Salmon, P. (1998a). Study I: Development and criterion validity of the children's interview for psychiatric syndromes (ChIPS). *Journal of Child and Adolescent Psychopharmacology*, *8*, 205-211.

Teare, M., Fristad, M., Weller, E., Weller, R. & Salmon, P. (1998b). Study II: Concurrent validity of the DSM-III-R children's interview for psychiatric syndromes (ChIPS). *Journal of Child and Adolescent Psychopharmacology*, *8*, 213-219.

Weller, E., Weller, R., Fristad, M., Rooney, M. & Schecter, J. (2000). Children's interview for psychiatric syndromes (ChIPS). *Journal of the American Academy of Child and Adolescent Psychiatry, 39,* 76-84.

Weller, E. B., Weller, R. A., Rooney, M. T., & Fristad, M. A. (1999a). *Children's Interview for Psychiatric Syndromes (ChIPS)*. Washington, D.C.: American Psychiatric Press, Inc.

Weller, E. B., Weller, R. A., Rooney, M. T., & Fristad, M. A. (1999b). *Children's Interview for Psychiatric Syndromes –Parent version (P-ChIPS)*. Washington, D.C.: American Psychiatric Press, Inc.

Welner, Z., Reich, W., Herjanic, B., Jung, K.G., & Amado, H. (1987). Reliability, validity, and parent-child agreement studies of the Diagnostic Interview for Children and Adolescents (DICA). *Journal of the American Academy of Child and Adolescent Psychiatry, 26,* 649-653.

Youngstrom, E., Meyers, O., Demeter, C., Youngstrom, J., Morello, L., Piiparinen, R., et al. (2005). Comparing diagnostic checklists for pediatric bipolar disorder in academic and community mental health settings. *Bipolar Disorders*, *7*, 507-517.